07975001 Genuine Article#: 231EK Number of References: 38
Title: Detection of the toxic dinoflagellate Alexandrium fundyense (Dinophyceae) with oligonucleotide and antibody probes: Variability in labeling intensity with physiological condition
Author(s): Anderson DM (REPRINT) ; Kulis DM; Keafer BA; Berdalet E
Corporate Source: WOODS HOLE OCEANOG INST,DEPT BIOL/WOODS HOLE//MA/02543 (REPRINT); INST CIENCIES MAR,/BARCELONA 08039//SPAIN/
Journal: JOURNAL OF PHYCOLOGY, 1999, V35, N4 (AUG), P870-883
ISSN: 0022-3646 Publication date: 19990800
Publisher: PHYCOLOGICAL SOC AMER INC, 810 EAST 10TH ST, LAWRENCE, KS 66044
Language: English Document Type: ARTICLE
Abstract: The toxic dinonagellate Alexandrium fundyense Balech was grown under temperature- and nutrient-limited conditions, and changes in labeling intensity on intact cells were determined for two probe types: an oligonucleotide probe targeting **rRNA** and a monoclonal antibody (MAb) targeting a cell surface protein. In nutrient-replete batch culture, labeling with the **rRNA** probe was up to 400% brighter during exponential phase than during stationary phase, whereas MAb labeling did not change significantly with growth stage at the optimal growth temperature. In cultures grown at suboptimal, low temperatures, there was a significant difference between labeling intensity in stationary versus exponential phase for both probe types, with exponential cells labeling brighter with the **rRNA** probe and slightly weaker with the MAb. The decrease in **rRNA** probe labeling with increasing culture age was likely due to lower abundance of the target nucleic acid, as extracted RNA varied in a similar manner. With the IMAI, and the **rRNA** probes, slower growing cultures at low, nonoptimal temperature labeled 35% and 50% brighter than cells growing faster at warmer temperatures. Some differences in labeling intensity per cell disappeared when the data were normalized to surface area or volume, which indicated that the number of target antigens or **rRNA** molecules was relatively constant per unit area or volume, respectively. Slow growth accompanying phosphorus and nitrogen limitation resulted in up to a 400% decrease in labeling intensity with the **rRNA** probe compared to nutrient-replete levels, whereas the MAb labeling intensity increased by a maximum of 60%. With both probes, labeling was more intense under phosphorus limitation than under nitrogen limitation, and for all conditions tested, labeling intensity was from 600% to 3600% brighter with the MAb than with the **rRNA** probe. Thus, it is clear that significant levels of variability in labeling intensity can be expected with both probe types because of the influence of environmental conditions and growth stage on cellular biochemistry, cell size, **rRNA** levels, and the number or accessibility of cell surface proteins. Of the two probes tested, the **rRNA** probe was the most variable, suggesting that in automated, whole-cell assays, it can be used only in a semiquantitative manner. For manual counts, the human eye will likely accommodate the labeling differences. The MAb probe was less variable, and thus should be amenable to both manual and automated counts.

3/7/98 (Item 24 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

03701539 Genuine Article#: PZ536 Number of References: 14
Title: CHEMILUMINESCENCE DETECTION OF RED TIDE PHYTOPLANKTON **CHATTONELLA**-MARINA
Author(s): LEE TY; GOTOH N; NIKI E; YOKOYAMA K; TSUZUKI M; TAKEUCHI T; KARUBE I
Corporate Source: UNIV TOKYO,ADV SCI & TECHNOL RES CTR,MEGURO KU,4-6-1 KOMABA/TOKYO 153//JAPAN/; UNIV TOKYO,ADV SCI & TECHNOL RES CTR,MEGURO KU/TOKYO 153//JAPAN/

2/7/17 (Item 3 from file: 94)
DIALOG(R)File 94:JICST-EPlus

03885899 JICST ACCESSION NUMBER: 99A0248253 FILE SEGMENT: PreJICST-E
Detection of red tide causing phytoplankton, **Heterosigma** akashiwo, by using fluorescence polarization.
ASAI RYOICHI (1); OTANI KOZUE (1); NOMURA YOKO (1); MATSUKAWA RITSUKO (2); IKEBUKURO KAZUNORI (2); KARUBE ISAO (2); ARIKAWA YOSHIKO (3); (2) Univ. of Tokyo; (3) Japan Women's Univ.
Nippon Kagakkai Koen Yokoshu, 1998, VOL.75th, PAGE.315
JOURNAL NUMBER: S0493AAY ISSN NO: 0285-7626
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Conference Proceeding
MEDIA TYPE: Printed Publication
ABSTRACT: Fluorescence polarization was applied to monitoring of the red tide phytoplankton, **Heterosigma** akashiwo, which frequently caused fish death. Fluorescence polarization is a measure of the time-averaged rotational motion of fluorescent molecules. First, 18S ribosomal RNA of dominant phytoplankton causing red tide was analyzed and a pair of the 20mer origonucreotide was found as specific primers. The PCR was performed to amplify specific rRNA sequence and its PCR product was observed by electrophoresis. Then, the PCR product of FITC-labeled **primer** was applied to fluorescence polarization measurement. The increase of fluorescent polarization intensity of its PCR product was observed. (author abst.)

2/7/18 (Item 4 from file: 94)
DIALOG(R)File 94:JICST-EPlus

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? s (raphidoph? or heterosigma or chattonella or fibrocapsa)
             927   RAPHIDOPH?
            1083   HETEROSIGMA
            1182   CHATTONELLA
              83   FIBROCAPSA
      S1    2282   (RAPHIDOPH? OR HETEROSIGMA OR CHATTONELLA OR FIBROCAPSA)
? s s1 and (rrna or ribosomal or its or (transcribed (w) spacer))
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          107475   RRNA
          233919   RIBOSOMAL
         6890922   ITS
          104815   TRANSCRIBED
           70066   SPACER
           14119   TRANSCRIBED(W)SPACER
      S2     271   S1 AND (RRNA OR RIBOSOMAL OR ITS OR (TRANSCRIBED (W)
                   SPACER))
? rd s2
...examined 50 records   (50)
...examined 50 records   (100)
...examined 50 records   (150)
...examined 50 records   (200)
...examined 50 records   (250)
...completed examining records
      S3     153   RD S2 (unique items)
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